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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 09/072,959      | 05/05/98    | PAN                  | P 2919.1US          |

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EXAMINER

FOURSON III, G

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 11/12/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/072,959

Applicant(s)

Pan

Examiner

George Fourson

Group Art Unit

2823



☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-5, 11-17, 25-28, and 33-38 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-5, 11-17, 25-28, and 33-38 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2 and 4

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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The amendments to page 5, line 121 and page 5, line 13, in the amendment filed 5/5/98 could not be performed. The indicated terms to be replaced do not occur in those locations.

Claims 4,14,16,27,35 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 4,14,16,27,35 and 36 the use of "predetermined" reads on a nebulous mental step conducted prior to the manipulative steps of the claimed invention, hence rendering the present process claims unclear in meaning and scope. If applicant wishes to patent detailed controls over the recited process, they must be positively recited.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-4,11-14,16,25-27,33-35 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Saki.

Saki discloses formation of dielectric layer 202 and buffer layer 204 over semiconductor substrate 200, patterning of layers 202 and 204, trench etching using the patterned layers as a trench mask, thermal

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oxidation of the trench walls, isotropic etching of layer 204, filling of the trench with silicon dioxide, removal of a portion of the silicon dioxide and removal of the buffer layer 204 (fig.5a-5h).

Claims 5,15,28 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saki as applied to claims 1-4,11-14,16,25-27,33-35 and 37 above, and further in view of Pan et al.

Saki does not disclose annealing of the trench fill material. Annealing of trench fill material is disclosed by Pan et al. It would have been within the scope of one of ordinary skill in the art to employ the process of Pan et al for its known intended purpose to achieve the trench filling step of Saki.

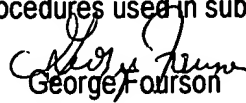
Claims 17 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saki as applied to claims 1-4,11-14,16,25-27,33-35 and 37 above, and further in view of the following comments.

Saki discloses recessing layer 204 100-300Å (col.5, line 36). See MPEP 2144.05.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956. **See MPEP 203.08.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner George Fourson whose telephone number is (703) 308-2544. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax number for this group is (703)308-7722(and 7724 and 7382). MPEP 502.01 contains instructions regarding procedures used in submitting responses by facsimile transmission.

  
George Fourson  
Primary Examiner  
Art Unit 2823

GFourson  
November 8, 1999